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## PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Philippe TAILHADES et al.

Group Art Unit: 2884

Application No.: 10/582,520

Examiner: M. BRYANT

Filed: September 28, 2006

Docket No.: 128360

For: THE USE OF SPINEL FERRITES AS SENSITIVE MATERIAL FOR BOLOMETRIC INFRARED DETECTOR DEVICES

### SUPPLEMENTAL RESPONSE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Further to the December 7, 2009 Amendment filed with a Request for Continued Examination and Petition for Extension of Time ("Amendment"), Applicants hereby submit the following evidence with respect to the meaning of "dilute resistive medium."

As stated in the Amendment, French Publication No. 2 150 608 to Coron ("Coron") merely discloses that ferrites and iron oxides are suitable to be incorporated into Coron's bolometer, not because of sensitivity material properties, but because ferrites and iron oxides have suitable electrical conductivity and permittivities as a "dilute resistive medium" with optical properties such as plasma frequency, etc., See Coron, page 2, lines 5-8.

To further support the meaning of "dilute resistive medium," Applicants submit a copy of pages 578 and 579 from Crawford, Frank S., Jr., Berkeley Physics Course, Volume 3, "Waves," McGraw-Hill, New York, 1968 ("Waves"), attached hereto. Beginning on page 578, Waves discloses two limiting cases that exist with respect to a "purely resistive medium"

including: (1) Case 1: Dilute resistive medium; and (2) Case 2: Dense resistive medium (Waves, pages 578-79).

With respect to Case 1, the term "dilute resistive medium" is defined as a case where  $\omega$ ,  $\Gamma$ , and  $\omega_p$  satisfy the relationship described in equation (102) (Waves, page 578). Waves then substitutes that relationship into equation (100) to yield equation (103), relating to the complex square of the index of refraction for a dilute resistive medium (Waves, page 578).

Based on the above, Applicants assert that instead of disclosing ferrites and iron oxides as a sensitive element to be employed in a bolometric device, Coron merely discloses the use of ferrites and iron oxides for use as a dilute resistive medium on the basis of their optical properties, and their ability to absorb infrared radiation or convert infrared radiation into heat (see Coron, page 2, lines 5-8 as evidenced by Waves, pages 578-579).

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.